

BOTANICAL GAZETTE

MARCH 1898

UNDESCRIBED PLANTS FROM GUATEMALA AND
OTHER CENTRAL AMERICAN REPUBLICS. XX.

JOHN DONNELL SMITH.

(WITH PLATE XII)

Theobroma simiarum Donn. Sm.—Folia obovato-oblonga cuspidata ad basin cordatam 3-nervia dentato-repanda supra glabra subtus subcanescentia et in nervatione fusco-pilosa. Inflorescentia e trunco prorumpens fasciculata intricato-ramosa multiflora. Ligulae jam in aestivatione reflexae cucullo vix bis longiores obovatae retusae in unguem gracilem attenuatae staminodiis obovato-lanceolatis paulo breviores dimidio angustiores. Stamina triantherifera. Fructus elliptico-cylindraceus coriaceo-cartilagineus exangulatus exrugosus.

A lofty tree with spreading branches, younger parts and inflorescence tomentose. Stipules linear-lanceolate, plurinerved, about 2^{cm} long. Leaves coriaceous, 3-4^{dm} × 14-19^{cm}, strongly reticulated, midrib and lateral nerves prominent beneath; petioles stout, about 12^{mm} long. Cymes sessile, axes woody, pedicels bibracteolate in middle. Calyx tomentose, partite nearly to base; segments reflexed, 10 × 6^{mm}, acute, furnished within at base with yellow and minutely oblong glands. Cuculli glabrous, oval, 6^{mm} long, 5-nerved; ligulae glabrous, with claw 5^{mm} long added 10^{mm} long, at rounded apex 4^{mm} broad. Staminal tube naked, 2^{mm} high, equaling the free part of filaments; staminodes erect, glabrous, exunguiculate, 13^{mm} long, at base 2^{mm} broad. Styles distinct nearly to base, twice longer than globose and tomentose ovary. Fruit 24-26^{cm} long, 8.5-9^{cm} in diameter, rounded at apex, more obtuse at base, fusco-farinose, surface uniformly even; seeds

about 45, compressed-globose, about 2^{cm} in diameter.— Differs from other many-flowered species by conspicuously petaloid staminodes, and from all congeners by the elongated fruit, of which the surface is neither angled, ribbed nor excavate.— Popular name *Cacao de Mono*.

Hacienda de La Concepcion, Llanuras de Santa Clara, Costa Rica, alt. 200^m, Feb. 1896, *Donn. Sm.*, no. 6457 Pl. Guat. etc., qu. ed. *Donn. Sm.*— Térraba, C. R., alt. 260^m, Feb. 1891, *Pittier & Tonduz*, no. 3925 herb. nat. C. R.— Forests of Boruca, C. R., alt. 466^m, Mch. 1892, *Tonduz*, no. 6852 herb. nat. C. R.— Turrialba, alt. 570^m, C. R., Nov. 1893, *Tonduz*, no. 8373 herb. nat. C. R.— Santa Clara, C. R., Sept. 1896, *Cooper*, no. 10244 herb. nat. C. R.

Sambucus oreopola *Donn. Sm.*— Foliola 9–11 maxima opaca supra præter nervos furfuraceos glabrescentia subtus pube cinerascence pallidiora, lateralia lanceolata sensim et acutissime elongata ad basin rotundata, terminale e medio utrinque attenuatum. Cyma decomposita 5-radiata.

Apparently arborescent. Stipules subulate, acute, 4–5^{mm} long. Leaves with petiole 1^{dm} long and dilated at base added, 3–4^{dm} long; leaflets exstipulate, the younger elliptical-lanceolate and acuminate at each end, the fully grown ones 16–19 × 4–5^{cm}, the lower ones with a petiole 5–8^{mm} long, the upper sessile, the uppermost pair occasionally decurrent-adnate, terminal petiolule 1–2^{cm} long; lateral nerves about 6–8 to the side, the lower ones short, the upper long-ascending at a narrow angle with midrib, veins subobsolete on upper surface; the whole margin incurved-mucronulate-serrate. Cyme corymbiform, glabrous, 2–5^{dm} long, 3.5^{dm} broad; flowers 5-merous, 5–6^{mm} in diam. Tube of calyx semiglobose, 1^{mm} high, sulcate, little longer than the ovate lobes. Corolla within sparsely pilose. Berries not present.— A subalpine species differing little from *S. Canadensis* Linn. except by form, size and indument of leaves.

Forests of Rancho Flores, Volcán Barba, C. R., alt. 2043^m, Feb. 1890, *Tonduz*, no. 2107 herb. nat. C. R.— Volcán Irazú, C. R., alt. 2000^m, July 1891, *Tonduz*, no. 4223 herb. nat. C. R.

Burmeistera microphylla *Donn. Sm.*— Glabra. Folia minima internodiis longiora ovato-elliptica utrinque acuminata succulenta, margine glandulis paucis obscure crenato, nervis venisque supra impressis subtus immersis. Pedunculi nutantes foliis vix longiores. Calycis tubus parvus lobis oblongis subbrevior. Corollae tubus anguste elongatus calyce 3-plo longior laciniis supe-

riores bis superans. Columna staminea tubo triente longior, antheris inferioribus apice aureo-barbatis. Bacca globosa.

A small shrub, apparently epiphytal. Leaves $18-20 \times 3-11^{\text{mm}}$, yellowish beneath; nerves three to the side, reticulately anastomosing; petioles 3^{mm} long. Peduncles axillary. Tube of calyx turbinate, 1.5^{mm} high, lobes 2^{mm} long. Corolla virescent, tube 1.5^{cm} long, 2^{mm} in diameter, two superior segments 8^{mm} long, the lateral 6^{mm} long, the inferior 4^{mm} long. Staminal column adnate a little above base of tube, 2^{cm} long; superior anthers sprinkled with golden hairs, 3^{mm} long, a half longer than the others. Lobes of stigma 1^{mm} in diameter. Berry 6^{mm} in diameter, crowned with accrescent lobes of calyx.

La Palma, Costa Rica, alt. 1520^{m} , Nov. 1897, *Wercklé*, no. 11600 herb. nat. C. R.

Burmeistera tenuiflora Donn. Sm.—Folia subintegra oblongo-elliptica contracto-acuminata ad basin acuta, facie inferiore pallida fusco-reticulata ad costam nervos petiolos pubescente. Calycis tubus obconicus 5-costatus in pedunculum sensim attenuatus laciniis linearibus brevior. Corollae tubus tenuis laciniis et calycinis et propriis longior. Columna staminea basi corollae adnata glabra vix exserta, antheris totis imberbibus.

Leaves $6-8 \times 2.5-3^{\text{cm}}$, petioles $6-9^{\text{mm}}$ long. Peduncles exceeding leaves, $5-7^{\text{cm}}$ long. Tube of calyx 7^{mm} long, at top 4^{mm} broad, segments $9-10 \times 1^{\text{mm}}$, their sinuate margin glandular-punctate. Tube of corolla 11^{mm} long, at top 2.5^{mm} broad; segments falcate, broad, canescent and reticulate on face, the superior ones $9 \times 4^{\text{mm}}$, the inferior a third smaller. Staminal column 2.2^{cm} long, anthers 6^{mm} long. Lobes of stigma 2^{mm} in diameter. Berries not seen.

Forests of Alto del Roble, Volcán Barba, C. R., alt. 2000^{m} , May 1888, *Pittier*, no. 19 herb. nat. C. R.

Cavendishia capitulata Donn. Sm.—Glabra. Folia subsessilia parva oblongo-obovata quintuplinervia reticulata, nervis venisque subtus immersis. Inflorescentia axillaris terminalisque sessilis, floribus paucis subcapitatis parvis e bracteis paulo emergentibus, bracteolis geminis oblongis calycem fere obtegentibus membranaceis ciliolatis. Calycis dentes acuti ciliolati. Corolla non nisi glandulis denticulata.

Apparently a small shrub. Leaves $20-25 \times 8-9^{\text{mm}}$, coriaceous, apex obtuse, base acute, margin revolute, petioles 2^{mm} long. Bracts purple, the

exterior ones minute and orbicular, the interior elliptical; the innermost largest, $12 \times 8^{\text{mm}}$, obtuse. Pedicels 3-4, scarcely 1^{mm} long. Bracteoles 4^{mm} long, obtuse. Calyx 4^{mm} high, base intruded; limb equaling tube, minutely denticulate. Corolla roseate, narrower and paler above, 12^{mm} long, apiculated with dentiform red glands. Genitals equaling corolla. Stamens of equal length; filaments slightly cohering in a tube 2^{mm} high, their free part alternately equaling the tube or almost none; anthers subequal, 2^{mm} long, their tubes alternately 5 or 7^{mm} long. Matured berry not seen.—Nearest to *C. strobilifera* Benth. et Hook.

La Palma, Costa Rica, alt. 1500^{m} , Nov. 1897, *Wercklé*, no. 11565 herb. nat. C. R.

PERNETTYA CILIARIS D. Don, var. **alpina** Donn. Sm.—Ramuli dense setosi. Folia e basi obtusiuscula oblongo-lanceolata subtus setifera. Pedunculi folia aequantes per totam longitudinem bracteosi.

Cerro de La Muerte, C. R., alt. 3100^{m} , Jan. 1897, *Pittier*, no. 10543 herb. nat. C. R.

Ardisia pleurobotrya Donn. Sm.—Folia obverse lanceolato-elliptica superne contracto-acuminata deorsum attenuata integra coriacea immaculata subtus lepidota. Paniculae axillares longe pedunculatae folia subaequantes lepidotae, pedicellis ad apicem ramorum primariorum alternorum umbellatim racemosis. Corollae usque ad duas partes fissae segmenta ovata acuta calycinis vix bis longiora. Antherae sessiles breves lanceolatae longitudinaliter dehiscentes.

Younger branchlets rufescent, lepidote, internodes very short. Leaves glabrous above, beneath rufescent and densely covered with scales conspicuous under a lens, $8-10 \times 2.5-3^{\text{cm}}$, apex obtuse; lateral nerves somewhat remote, prominent only on lower surface; petioles $6-10^{\text{mm}}$ long. Panicles from upper axils, peduncles $4-7^{\text{cm}}$ long, rhachis $2.5-4^{\text{cm}}$ long, primary branches $1-2^{\text{cm}}$ long; pedicels chiefly four or five, about 1^{cm} long; lower bracteoles oblanceolate, 8^{mm} long, the upper subulate and minute. Segments of calyx ovate, 2.5^{mm} long, in center lepidote and maculate, margin hyaline and ciliolate. Tube of corolla maculate-punctate, 2^{mm} long, segments 4^{mm} long. Anthers inserted at middle of tube, 2.5^{mm} long. Ovary subglobose, maculate-punctate, prolonged into style $3-4^{\text{mm}}$ long, pluriovulate. Berry oval-globose, 5^{mm} long.

Potrero del Alto, Volcán Poas, C. R. alt. 2450^{m} , July 1888, *Pittier*, nos. 389 & 759 herb. nat. C. R.—Laguna del Volcán Barba, C. R., alt. 2753^{m} ,

Feb. 1890, *Tonduz*, no. 1949 herb. nat. C. R.—Forests of Achiote, Volcán Poas, C. R., alt. 2200^m, Nov. 1896, *Tonduz*, no. 10778.

Macroscepis congestiflora Donn. Sm.—Rami sicut petioli costae inflorescentia pilis longis patentibus fusci. Folia longiuscule petiolata obovata cuspidato-acuminata basi bilobata, nascentia villosa, adulta pilis brevibus appressis utrinque aspersa subtus pallida. Flores ebracteolati numerosissimi in umbellam globosam petiolum aequantem conferti, pedicellis pedunculum subaequantibus. Corollae calyce triente longioris tubus globosus glaber pallidus, limbus nigrescens intus papillosus tubo vix longior ultra medium suborbiculari-lobatus. Coronae squamae inclusae apice inflexo truncatae. Gynostegium brevissimum, caudiculis subnullis, disco stylino concavo.

Leaves 12–21 × 8–12^{cm}, margin pilose, basal lobes chiefly incumbent, nerves 7–9 to the side, petioles 3–4^{cm} long. Pedicels 25–40, 8–15^{mm} long; bracteoles linear-lanceolate, subequaling pedicels. Segments of calyx pilose, oblong-ovate, 10 × 5^{mm}. Tube of corolla 6^{mm} long; spreading limb pubescent beneath, nearly 2^{cm} in diam. Coronal scales subquadrate. Anthers tipped with an oval membrane 1^{mm} long. Gynostegium 2^{mm} high. Disk of style 2^{mm} in diam. Follicles not present.—A species with the foliage of *M. obovata* HBK. and the dense umbels of *M. Trianae* Decne., but differing from both by the structure of the bractless flowers.

River-banks, La Sierra near Mataguescuintla, Depart. Santa Rosa, Guatemala, alt. 1500^m, *Heyde & Lux*, no. 6350 Pl. Guat. etc., qu. ed. Donn. Sm.

PROSTHECIDISCUS Donn. Sm., nov. gen. *Asclepiadearum*.—Sepala basi intus pauciglandulosa. Corolla alte partita reflexa, segmentis linearibus in praefloratione rectis et dextrorsum obtegentibus. Corona exterior infra apicem antheriferum columnae stamineae elongatae annularis 5-crenata, interior ad carinas 5 dorso filamentorum adnatas reducta. Antherae membrana inflexa terminatae, polliniis in quoque loculo solitariis compressis pendulis, caudiculis hyalinis brevibus. Discus stylinus in rostrum parum angustius cylindraceum superne complanatum productus. Folliculi lanceolato-ovoidei tuberculato-echinati.—Suffrutex volubilis. Folia opposita cordiformia. Racemi ex una axilla pedunculati.

Genus inter Cynancheas locandum ad Oxypetalum quodammodo accedit.

Prosthecidiscus Guatemalensis Donn. Sm.— Simul setulosus et glanduloso-pubescens. Folia longipetiolata suborbicularia cuspidato-acuminata lobis rotundatis et imbricatis cordata supra pilis brevibus parce onusta subtus praeter nervationem fuscam glandulosam et setulosam glabra et pallida, margine repando. Pedunculi petiolis sublongiores racemum superantes, pedicellis bibracteolatis flores aequantibus. Sepala lanceolata intus 3-5 glandulosa. Corolla extus pilis brevibus sparsissime oblecta intus glabra in praefloratione basi intrusa sepalis 4-plo tubo decies longior. Corona minuta, crenis tumidis. Ovaria stylos aequantia. Disci appendicium gynostegio 3-plo brevior adjecto corollam aequans.

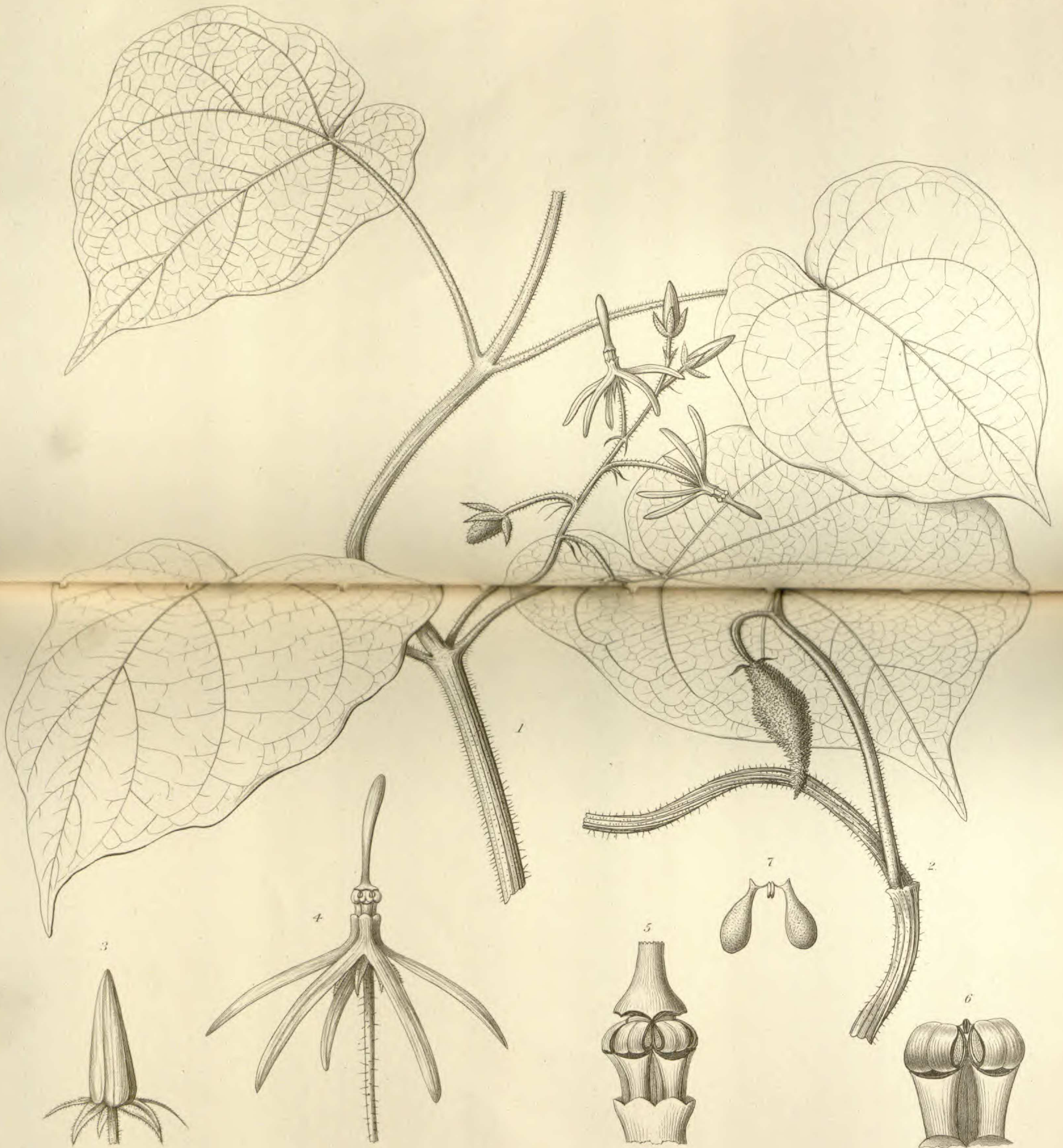
Leaves 9-13×8-12^{cm}, petioles 4-6^{cm} long. Racemes 6-12-flowered; bractlets filiform, 3-4^{mm} long. Flowers turning black in drying, 2^{cm} long. Anthers 1^{mm} long. Pistils 4^{mm} long. Matured follicles not present.

Cerro Gordo, 2½ leagues N. W. from Cenaguilla, Depart. Santa Rosa, Guatemala, alt. 1100^m, Sept. 1892, *Heyde & Lux*, no. 3845 Pl. Guat. etc., qu. ed. Donn. Sm.

EXPLANATION OF PLATE XII.—Fig. 1, stem with leaves and flowers. Fig. 2, same with young follicle. Fig. 3, bud. Fig. 4, flower. Fig. 5, gynostegium with corona and base of styler disk. Fig. 6, stamens. Fig. 7, pollinia.

Bourreria litoralis Donn. Sm.—Folia longe petiolata ex oblongo-ovato elliptica et utrinque acuta aut obtusa supra pilis e tuberculo ortis plus minus scabriuscula subtus pubescentia. Cyma laxiramosa, axibus filiformibus patulis. Calyx parvus dentibus acute triangularibus usque ad medium fere partitus corollae tubum aequans lobis dimidio brevior. Filamenta ad basin dilatata villosa duabus partibus exserta.

A small tree. Branchlets and inflorescence glabrescent. Leaves variable in outline, sometimes oval and 7.5×5^{cm}, sometimes ovate- or obovate-elliptical and 12×6^{cm}, petioles 1.5-3.5^{cm} long. Cyme corymbose, chiefly exceeding leaves; bracteoles lanceolate, minute, caducous. Calyx 4^{mm} high, externally pilose, internally except canescent teeth glabrous. Lobes of corolla suborbicular, 8-9^{mm} long. Filaments inserted at apex of tube, 4^{mm} long, twice exceeding oblong anthers. Ovary, with style at apex bifid added, twice longer than calyx, stigmas capitate. Drupe not present.—By structure of flowers nearest to *B. formosa* Hemsl.



C. E. Faxon, del.

PROSTHECIDISCUS GUATEMALENSIS, Donn. Sm.

B. Meisel, Lith. Boston.

Forests on the plain of Salinas, Golfo Dulce, Costa Rica, July 1890, Pittier, nos. 2787 and 2814 herb. nat. C. R.

TOURNEFORTIA NELSONI, proposed as a new species in BOT. GAZ. 23: 10. 1897, and founded upon no. 3615 of Nelson's collections in Guatemala, does not appear to differ from *T. petiolaris* DC.

Tournefortia subspicata Donn. Sm.—Praeter inflorescentiam corollamque subglabra. Folia longe petiolata obovato-elliptica utrinque acuminata discoloria supra minutissime lepidota, nervi laterales crebri cum venis subparallele transversis subtus conspicui. Cyma pluries dichotoma, floribus dissitis subsessilibus. Corollae tubus calyce vix bis longior, lobi ovato-lanceolati tubi dimidium fere aequantes. Pistillum calycem vix aequans.

Fruticose. Branchlets sulcate. Leaves 10-12×4-6^{cm}, the upper often opposite or ternate, in drying rugose above and flavescent beneath; lateral nerves 8-10 to the side, like the veins nigrescent beneath and sparsely pubescent; petioles 2-3.5^{cm} long. Peduncles terminal, erect, dichotomous, spikes recurved and like the corolla flavescent with a strigillose pubescence, pedicels chiefly 1-2^{mm} long. Segments of calyx glabrous, becoming black in drying, ovate-lanceolate, 4^{mm} long. Tube of corolla 7^{mm} long, ampliate at throat, lobes 3^{mm} long and acute. Stamens subsessile at middle of tube; anthers linear, 2.5^{mm} long, muticous. Ovary glabrous, conic-ovoid, short style stigmatose below the conic apex. Drupes not seen.

Plateau of Volcán Turrialba, Costa Rica, alt. 2700^m, Jan. 1891, Pittier, no. 877 herb. nat. C. R.

Calceolaria sciadephora Donn. Sm. (§ CHEILONCOS Wettst. in Engl. et Prantl. Natuerl. Pflanzenfam. 4^{3b}: 55. § *Perfoliatae* Benth.) — Viscoso-pubescens. Folia subtus incano-tomentulosa grosse duplicato-dentata elongato-deltoidea in petiolos dimidio breviores late alatos basi dilatata dentata connatos abrupte contracta. Pedunculi elongati apice bracteato subumbellatim multiflori, pedicellis filiformibus. Calyx luteus corolla triente brevior labio postico bis longior. Antherae reniformes, loculis confluentibus proclinatis.

Suffruticose, erect, tall. Leaves discolorate, with petiole 5-7^{mm} broad added 8^{cm} long, 3.5^{cm} broad, acute, base truncate, interpetiolar wing 9-12^{mm} broad. Peduncles from upper axils, 4.5-7^{cm} long; pedicels 2-3^{cm} long,

chiefly umbellately, occasionally corymbosely, 9-14-fasciculate; bracts foliaceous, sessile, ovate-lanceolate, 2.5-3^{cm} long. Calyx colored like corolla, pubescent on both sides, segments ovate, 8-9^{mm} long. Corolla glabrous, 12-14^{mm} long; posterior lip truncate; 4-5^{mm} long; anterior lip oblong-obovate; aperture 7×4^{mm}. Cells of anthers oval, 2^{mm} long, continuing pendulous after anthesis. Ovary pubescent, with glabrous style added 8^{mm} long. Capsules not present in the specimens.—This alpine species is to be located between *C. tomentosa* Ruiz et Pav. and *C. calycina* Benth., resembling the former by leaves and flowers, and the latter by inflorescence, but differing from both by anthers.

Páramos de La Muerte at the limits of the forest growth, Costa Rica, alt. 3100^m, Jan. 1891 and 1897, *Pittier*, nos. 3486 and 10542 herb. nat. C. R.

Solenophora calycosa Donn. Sm.—Fusco-pubescent, nodis glabris. Folia ovata aut ovato-elliptica acuta basi inaequalia et obtusa punctata supra pubescentia subtus praeter nervos glabra duplicatim denticulata. Pedunculi petiolos subaequantes quam flos dimidio breviores medio bibracteolati uniflori. Calyx e basi turbinata tubuloso-campanulatus, lobis brevibus rotundis denticulatis. Corolla coccinea calycem 3-plo paene superans, lobis integris intus flavis et immaculatis.

Leaves unequal in the pairs, the greater 13-22×8-12^{cm}, the other a third smaller, lateral nerves 7-9 to the side, petioles 4-7^{cm} long. Peduncles about 5^{cm} long, bracteoles minute. Calyx reticulately veined, at base and within more densely pubescent, 3.3^{cm} long, adnate part 7^{mm} long, lobes 5^{mm} long and broad, teeth apiculated with a red gland. Corolla pubescent without, glabrous within, 8.5^{cm} long, limb oblique, lobes 1^{cm} long and 1.5^{cm} broad. Stamens included; filaments free, inserted at very base of tube; anthers 3^{mm} long, cohering quadrately, cells diverging at base. Gland of disk broad, bilobed, pubescent. Style pubescent, 5.5^{cm} long; stigma entire, stomatomorphous. Fruit unknown.

Slopes of Volcán Barba, Costa Rica, alt. 2300^m, July 1888, *Pittier*, no. 283 herb. nat. C. R.—Borders of Río Mancaron, Volcán Barba, Atlantic side, alt. 2100^m, Feb. 1890, *Tonduz*, no. 2022 herb. nat. C. R.

Episcia longipetiolata Donn. Sm. (§ CENTROSELENIA Benth. in Hook. Lond. Journ. Bot. 5: 362.)—Praeter inflorescentiam puberulam glabra. Folia magna petiolis tenuibus vix ac ne vix longiora ovata obtusa denticulata membranacea nitida. Flores umbellatim congesti, pedunculis bracteosis et pedicellis brevibus. Segmenta calycina sicut bracteae linearia filiformi-attenuata, pos-

tico sejuncto paulum brevior. Corolla calyce bis longior saccata anguste tubulosa, lobis maculatis fimbriatis. Glandula sola integra.

Leaves 22-25 \times 12-16^{cm}, shortly cuspidate, slightly cuneate at base; nerves 14-15 to the side, like midrib fuscous beneath. Peduncles aggregated in the axils, 2-3^{mm} long; bracts several, 18-25^{mm} long, the exterior ones broader and shorter; pedicels 4-6, about 6^{mm} long. Segments of calyx 1.5^{cm} long, like bracts puberulous and entire. Corolla glabrous, straight, cylindrical, 3^{mm} broad, abruptly ampliate into limb, lobes equaling width of tube. Anthers ovate, 1^{mm} long, naked. Gland 1^{mm} high, black. Ovary pilose, style a little shorter than corolla. Fruit not present.—To be located with *E. congesta* Hanst. and *E. glabra* Hanst., but differing remarkably from both by the petioles.

Borders of the road to Carrillo, Costa Rica, alt. 300^m, June 1890, *Tonduz*, no. 2493 herb. nat. C. R.

Alloplectus stenophyllus Donn. Sm.—Omnibus in partibus glaberrimus. Folia uniuscujusque paris dimorpha, alterum petiolatum oblongo-aut lineari-lanceolatum, alterum sessile acuminato-ovatum 3-4-ies minus. Pedunculi ex axillis foliorum majorum orti bini calyce breviores basi minute bracteolati. Calyx herbaceus, segmentis oblongo-lanceolatis, postico paene sejuncto, ceteris bis majoribus altius connatis corollae basi saccatae dimidium aequantibus. Antherae oblongae, loculis linearibus infra medium divergentibus.

Epiphytal. Larger leaf in the pairs 11-26 \times 3-4^{cm}, very acute, petiole 1.5-2.5^{cm} long; the smaller leaf 4-6 \times 2-2.5^{cm}. Peduncles 5-8^{mm} long, 1-flowered; bracteoles linear-lanceolate, 3-4^{mm} long. Calyx oblique; segments subentire, nerved, 13-17^{mm} long. Corolla pale-roseate; tube straight, 3^{mm} long, 1^{cm} broad at top; lobes rotund, subequal, 5^{mm} long. Stamens inserted a little above base of tube; filaments twisted after anthesis; anthers cohering, 5^{mm} long, affixed at middle, tumid at apex, sagittate below insertion. Gland posterior, single. Ovary 4^{mm} long, style 1.5^{cm} long, stigma stomatomorpho-bilobate. Fruit enclosed in the scarcely accrescent calyx oblong-ovoid, 1.5^{cm} long.

Forests of Suerre, Llanuras de Santa Clara, C. R., alt. 300^m, Apr. 1896, *Donn. Sm.*, no. 6724 Pl. Guat., etc., qu. ed. *Donn. Sm.*—Rio Verde, Llanuras de S. Clara, C. R., alt. 200^m, May 1896, *Donn. Sm.*, no. 6726 Pl. Guat. etc., qu. ed. *Donn. Sm.*—Forests of Tuis, C. R., alt. 650^m, Nov. 1897, *Tonduz*, no. 11512 herb. nat. C. R.

Alloplectus ventricosus Donn. Sm. (§ HYPOCYRTOIDEI Hanst. in *Linnaea* 34 : 377.)—Folia cum caule glabra ampla oblongo-lanceolata utrinque acuminata integra subtus rubescentia disparia, cujusque paris majus rarius utrumque longe petiolatum. Pedunculi toti bracteosi apice congestiflori. Calycis segmenta sicut bracteae paulo majores pubescentia sanguinea ovalia. Corolla tomentosa calyce pallidior et bis fere longior superne inflato-ventricosa et ore bis amplior, lobis minutis erectis. Antherae oblongae bilobae.

Epiphytal; stem stout. Leaves shining, the larger in the pairs 28 x 9 cm and attenuated into a petiole 5 cm long, a third or a half longer than the other one; nerves 6-7 to the side, arcuately ascending to the margin, like midrib stout beneath. Peduncles stout, 1.5-2 cm long; bracts imbricating, not involucrate, orbicular-oval, 1.5 cm long, contracted into a short stipe; pedicels short recurved. Calyx oblique; segments obovate-oval, 12 mm long, apex denticulate, the posterior one a half smaller. Corolla declinate at base, above the middle obovate-ventricose, 2 cm long, 1 cm broad at top, lobes 2 mm long. Anthers 3 mm long. Gland posterior, solitary. Fruit puberulous, spherical, 12 mm in diam., exceeded by the accrescent calyx, dehiscing in 2 valves.—

Related to *A. sparsiflorus* Mart.

Atirro, Prov. Cartago, C. R., alt. 600 m., April 1896, *Donn. Sm.* no. 6727 Pl. Guat., etc., qu. ed. *Donn. Sm.*

Codonanthe macradenia Donn. Sm.—Praeter petiolos pedunculos flores puberulos glabra. Folia carnosia opaca elliptica utrinque acuta, costa in utraque facie immersa, nervis obsolete. Pedunculi solitarii aut gemini petiolo bis longiores. Calyx pedunculatum subaequans, segmentis filiformi-linearibus corolla recta leviter ventricosa dimidio brevioribus. Stamina inclusa. Disci glandula majuscula.

Epiphytal; stems sparingly branched, rooting at nodes, the younger rubro-maculate and puberulous. Leaves becoming pallid in drying, 3-5 x 1.5-2.5 cm. Calyx oblique; segments fusco-puberulous on both sides, equal, 9 mm long. Corolla yellow, tube above gibbous base ampliate, cylindrical, 2 cm long, at throat 6 mm broad; lobes veiny, orbicular, 2 mm in diameter. Filaments free, inserted at base of tube; anthers connivent by pairs; cells globose, separated. Gland of disk stout, 2 mm high, apex retuse. Ovary puberulous, conic-ovoid, hardly 3 mm high; style villose, a half shorter than corolla. Berry oval-spherical, apiculate, 1 cm long, a little exceeding the augmented calyx, indehiscent.—Nearest to *C. gracilis* Hanst.

Borders of the river at Boruca, Costa Rica, alt. 460^m, Mch. 1892, *Tonduz*, no. 6769 herb. nat. C. R.—Forests of Santo Domingo de Golfo Dulce, C. R. Mch. 1896, *Tonduz*, no. 10051 herb. nat. C. R.—Hacienda de La Concepcion, Llanuras de Santa Clara, C. R. alt. 250^m, Apr. 1896, *Donn, Sm.*, no. 6719 Pl. Guat. etc., qu. ed. Donn. Sm.

Besleria imbricans Donn. Sm. (§ *PODOBESLERIA* Benth. et Hook.)—Folia longipetiolata magna oblongo-elliptica utrinque deorsum longius acuminata discoloria supra vix puberula subtus minute canescentia integra, nervis lateralibus utrinsecus circiter 16. Pedunculi elongati ad apicem racemuloso-pauciflori, floribus glabris. Calyx amplus glandulis rubris minute punctatus usque ad basin fere partitus in praefloratione clausus, segmentis orbiculari-ovalibus concavis valde imbricatis, postico minore et magis orbiculari, ceteris basi obliquis. Corolla coccinea quam calyx dimidio longior obovoidea breviter calcarata. Antherae globosae. Annulus inaequalis.

Herbaceous. Leaves 20–29 × 9–11^{cm}, pale beneath; nerves spreading, reaching nearly to margin; petioles 3–5^{cm} long. Peduncles 1^{dm} long; pedicels about 4, subequaling calyx. Segments of calyx 9–12^{mm} long. Corolla 2^{cm} long, mouth contracted; lobes rounded, 2^{mm} long. Stamens inserted near base of tube; filaments flat, 7–8^{mm} long; anthers 2.5^{mm} in diam., conniving by their apexes in a square; cells arcuate, confluent. Posterior half of annulus stout, oblique; the anterior half rudimentary. Ovary obovoid-globose, 3.5^{mm} long, glabrous; style stout, 8^{mm} long, glabrous, stigma conspicuously bilobed. Drupe not present.

Forests of Shirores, Talamanca, Costa Rica, alt. 100^m, Feb. 1895, *Tonduz*, no. 9192 herb. nat. C. R.

Besleria macropoda Donn. Sm. (§ *PSEUDOBESLERIA* Oerst.)—Tota praeter apicem ramulorum cum foliis nascentibus pubescentem glabra. Folia breviter petiolata oblongo-lanceolata aut -elliptica tenuiter acuminata basi angustata aut obtusiuscula calloso-denticulata crebre penninervia. Pedunculi longissimi, pedicellis gracilibus umbellatis pluribus. Segmenta calycina sejuncta aequalia lineari-lanceolata subulato-acuminata 3-nervia. Corolla aurantiacea e basi aequali urceolata calycem vix superans. Antherae reniformes. Annulus integer.

Apparently a tall herb. Leaves 10–14 × 3–5^{cm}, paler beneath; lateral nerves approximate, about 11 to the side, ascending nearly to margin, fus-

cous beneath; petioles canaliculate, 5-7^{mm} long. Peduncles 6-13^{cm} long; pedicels about 5-9, chiefly 2^{cm} long. Segments of calyx, with the 3^{mm} long mucro added, 10-12^{mm} long. Corolla 12-13^{mm} long; lobes 2^{mm} long, the superior two broader and connate. Stamens inserted below middle of tube, anthers conniving by their apexes in a square. Ovary conic-ovoid, equaling style. Fruit globose, 6^{mm} in diam., included in the not augmented calyx, apiculated by the remains of style, pericarp granulated.—Related to *B. laxiflora* Benth.

Damp woods at El Recreo, Costa Rica, July 1888, *Pittier*, no. 572 herb. nat. C. R.—Borders of road to Carrillo, C. R., alt. 300^m, May 1890, *Pittier*, no. 2495 herb. nat. C. R.—Forests of Tuis, Prov. Cartago, C. R., alt. 650^m, Oct. 1897, *Tonduz*, no. 11358 herb. nat. C. R.

Besleria robusta Donn. Sm. (§ PSEUDOBESLERIA Fritsch in Engl. et Prantl. Natuerl. Pflanzenfam. 4^{3b} : 158; non Oerst.)—Caulis petiolique crassi tomentosi. Folia coriacea integra maxima obovata acuta deorsum attenuata penninervia evenia supra glabra. Flores paucifasciculati breviter pedunculati. Calyx alte partitus extus sericeus intus glaber et rubescens, segmentis aequalibus oblongo-ovatis. Corolla glabra e basi vix gibbosa tubulosa calycem paulo superans, limbo aequali patulo.

Stem terete, near apex 1^{cm} in diam., internodes 1^{dm} long. Leaves 30 x 14^{cm}, becoming pale in drying, with scattered hairs beneath; nerves 12 to the side, extending to margin, like midrib tomentose beneath; petioles 5.5^{cm} long, 5-6^{mm} thick, canaliculate. Peduncles sericeous, 6-8^{mm} long. Segments of calyx 12^{mm} long. Corolla apparently yellow, succulent, puberulous within, 14^{mm} long, 3^{mm} wide, suberect; lobes round, 3^{mm} long. Stamens inserted below middle of tube, the rudimentary one 4^{mm} long; anthers reniform, cohering; cells oblong, 2^{mm} long, connective triangular. Annulus equal. Ovary glabrous, oblong-conical, with equal style added as long as calyx, stigma distinctly bilobed. Fruit not seen.—Nearest to *B. Riedeliana* Hanst.

Forests of Tsâki, Talamanca, Costa Rica, alt. 200^m, Apr. 1895, *Tonduz*, no. 9556 herb. nat. C. R.

Tabebuia sessilifolia Donn. Sm.—Glabra. Folia oblanceolata cuspidato-acuminata in basin sessilem sensim attenuata. Pedunculi ad apicem bracteosum ramulorum pauci-aggregati. Calyx coriaceus amplius pedunculum aequans spathaceo-fissus demum bilobus, tubo campanulato, lobis oblongo-ovatis integris enerviis. Corolla infundibuliformis intus praesertim ad lobos tuberculoso-